MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2022/2023

DBM5624 PRINCIPLE OF FINANCE

(All Sections/Groups)

24 NOVEMBER 2022
9.00 AM – 11.00 AM
(2 hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of 3 pages excluding cover page. The formulae appendices are given.

2. Attempt **ALL** questions. The distribution of the marks for each question is given.

QUESTION 1

Scenario 1
Ahmad is currently considering bond with maturity of 10 years and issues with a coupon rate of 8 percent. This bond will pay semiannual coupon payments with yield to maturity is 10 percent.

Scenario 2
Husni is examining 10 years bond with coupon rate of 12 percent. This bond will pay semiannual coupon payment with yield to maturity is 10 percent.

Both bonds issued at face value of RM1,000. Based on the information provided, answer the following questions:

a) Calculate the bond price for both scenarios above. Which one has higher current market value?

(11 marks)

b) Based on the calculation in **(a)**, classify if the bond is selling at a premium, discount or at par.

(4 marks)

c) If the yield to maturity is currently valued at 12 percent, explain the implications of your answers in **(b)**.

(4 marks)

d) Based on your answer in **(a)**, what is the percentage change in both bond's price?

(6 marks)

[Total 25 Marks]

QUESTION 2

Southern Connecticut has paid latest dividend payment of RM4 per share, its expected dividend will grow at 20 percent on the next year and 25 percent of the following two years. Afterwards the dividend will have constant growth at 20 percent. It is expected that the growth rate of 20 percent shall remain for quite a while, the required rate of return for this stock is 24 percent. Therefore, as investor, you need to know further information about this company's shares. Thus, you are required to answer the following questions below:

a) Calculate the dividends for the upcoming four years.

(12 marks)

b) What is the total value of the stock at year 3?

(4 marks)

c) Calculate the current price of stock as of today.

(4 marks)

d) If you plan to buy 50 units of company's shares, how much should you pay for it?

(3 marks)

e) What is the value of expected dividend on year 6?

(3 mark)

[Total 25 Marks]

Continued ...

QUESTION 3

You are considering several projects which required extensive evaluation. These projects are involved in petroleum exploration. The company estimated discount rate of 10 percent in evaluating the projects based on the current economic condition. Below are the expected net cash flows (including residual values) for each project:

YEAR	PROJECT RAPID (RM '000)	PROJECT SWIFT (RM '000)	PROJECT EXPEDITE (RM '000)
OUTLAY	-230,000	-250,000	-280,000
1	95,000	75,000	66,000
2	85,000	80,000	74,000
3	75,000	89,000	88,000
4	65,000	73,000	93,000
5	45,000	55,000	91,000

You are required to:

a) Calculate the expected Net Present Value (NPV) for all projects.

(18 marks)

b) In your evaluation, calculate the profitability index (PI) for each project.

(4.5 marks)

c) Based on your calculation in (a) and (b), which project should the company accept?

(2.5 marks)

[Total 25 Marks]

QUESTION 4

Loolaa Co. has the following capital structure:

	RM '000	RM '000
Equity and Reserves		
Ordinary shares, par value RM1	23,000	
Reserves	247,000	
		270,000
Non-Current Liabilities		
5% Preference shares, par value RM1	5,000	
6% Loan notes	11,000	
Bank Loan	3,000	
		19,000
		289,000

The ordinary shares of Loolaa Co are currently trading at RM4.26 per share, the dividends are expected to grow in the future by 4 percent per year and has just paid of RM0.25 dividend payment.

The 5% preference shares have market value of RM0.56 per share and these shares are irredeemable.

Continued ...

The 6% loan notes of Loolaa Co are currently trading at RM95.45 per loan note and will be redeemed at their par value of RM100 per loan note in 5 years' time. The yield to maturity is 7 percent per year. Loolaa Co pays corporate tax at tax rate of 25 percent.

You are required to calculate:

a) Market value of equity

(2 marks)

b) Market value of preference shares

(2 marks)

c) Market value of loan notes

(2.5 marks)

d) Total market value

(2.5 marks)

e) Cost of equity

(2.5 marks)

f) Cost of debt and cost of preference share

(4 marks)

g) Weighted Average Cost of Capital (WACC)

(5.5 marks)

h) What are the **FOUR (4)** factors that influence company's WACC?

(4 marks)

[Total 25 Marks]

End of Paper

Formulae Appendix

I. Finding the value of a bond

Bond value = $C \times [1 - 1/(1 + r)^t]/r + F/(1 + r)^t$

where

C = Coupon paid each period
r = Rate per period
t = Number of periods
F = Bond s face value

II. Finding the yield on a bond

Given a bond value, coupon, time to maturity, and face value, it is possible to find the implicit discount rate, or yield to maturity, by trial and error only. To do this, try different discount rates in the formula above until the calculated bond value equals the given bond value. Remember that increasing the rate *decreases* the bond value.

I. The general case

In general, the price today of a share of stock, P_0, is the present value of all of its future dividends, D_1, D_2, D_3, . . . :

$$P_0 = \frac{D_1}{(1 + R)^1} + \frac{D_2}{(1 + R)^2} + \frac{D_3}{(1 + R)^3} + \cdots$$

where R is the required return.

II. Constant growth case

If the dividend is constant and equal to D, then the price can be written as:

$$P_0 = \frac{D}{R}$$

If the dividend grows at a steady rate, g, then the price can be written as:

$$P_0 = \frac{D_1}{R - g}$$

This result is called the *dividend growth model.*

III. Nonconstant Growth

If the dividend grows steadily after t periods, then the price can be written as:

$$P_0 = \frac{D_1}{(1 + R)^1} + \frac{D_2}{(1 + R)^2} + \cdots + \frac{D_t}{(1 + R)^t} + \frac{P_t}{(1 + R)^t}$$

where

$$P_t = \frac{D_t \times (1 + g)}{(R - g)}$$

IV. Valuation Using Multiples

For stocks that don't pay dividends (or have erratic dividend growth rates), we can value them using the PE ratio and/or the price-sales ratio:

P_t = Benchmark PE ratio × EPS_t
P_t = Benchmark price-sales ratio × Sales per $share_t$

V. The required return, R, can be written as the sum of two things:

$$R = D_1/P_0 + g$$

where D_1/P_0 is the *dividend yield* and g is the *capital gains yield* (which is the same thing as the growth rate in dividends for the steady growth case).

I. Finding Net Present Value (NPV)

$$NPV = \sum_{t=0}^{n} \frac{CF_t}{(1+R)^t}$$

II. Finding Average Accounting Return

$$AAR = \frac{\text{Average Net Income}}{\text{Average Book Value}}$$

III. Profitability Index

$$PI = \frac{\sum_{t=1}^{n} \frac{CF_t}{(1+r)^t}}{|CF_0|}$$

I. The cost of equity, R_E

A. Dividend growth model approach (from Chapter 7):

$$R_E = D_1/P_0 + g$$

where D_1 is the expected dividend in one period, g is the dividend growth rate, and P_0 is the current stock price.

B. SML approach (from Chapter 11):

$$R_E = R_f + \beta_E \times (R_M - R_f)$$

where R_f is the risk-free rate, R_M is the expected return on the overall market, and β_E is the systematic risk of the equity.

II. The cost of debt, R_D

A. For a firm with publicly held debt, the cost of debt can be measured as the yield to maturity on the outstanding debt. The coupon rate is irrelevant. Yield to maturity is covered in Chapter 6.

B. If the firm has no publicly traded debt, then the cost of debt can be measured as the yield to maturity on similarly rated bonds (bond ratings are discussed in Chapter 6).

III. The weighted average cost of capital, WACC

A. The firm s WACC is the overall required return on the firm as a whole. It is the appropriate discount rate to use for cash flows similar in risk to the overall firm.

B. The WACC is calculated as:

$$WACC = (E/V) \times R_E + (D/V) \times R_D \times (1 - T_C)$$

where T_C is the corporate tax rate, E is the *market* value of the firm s equity, D is the *market* value of the firm s debt, and $V = E + D$. Note that E/V is the percentage of the firm s financing (in market value terms) that is equity, and D/V is the percentage that is debt.